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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Naval Surface Warfare Center
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EXAMINER

FEELY, MICHAEL J

ART UNIT PAPER NUMBER

1712

15

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

72-15

Office Action Summary	Application No.	Applicant(s)	
	09/822,308	SORATHIA, USMAN A.K.	
	Examiner	Art Unit	
	Michael J Feely	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,9,12-14 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,9,12-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 9,13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

1. The following claims are pending in the instant application: 2, 9, 12-14, and 16.

Response to Amendment

2. The finality of the Office action dated September 16, 2002 has been withdrawn.

Claim Objections

3. Claims 9, 13, and 14 are objected to because of the following informalities: in line 3 of claims 9 and 13, the word "t he" should be replaced with -the-. Claim 14 is objected to because it depends on claim 13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 2, 9, and 12-14 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process of forming a composite structure including the step introducing a fire resisting agent to the barrier *during* formation of the barrier, does not reasonably provide enablement for a process of forming a composite structure including the step of introducing a fire resisting agent to the barrier *after* formation of the barrier. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The Specification describes a process, wherein the fire-resisting agent is introduced during the formation of the barrier (page 3, lines 19-24; Figure 3); however, the Specification is silent regarding the introduction of the fire-resisting agent *after* formation of the barrier.

6. Claim 16 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a process for protective fabrication of a composite structure including the step of introducing a fire resisting agent to the barrier *during* formation of the barrier layer, does not reasonably provide enablement for a process for protective fabrication of a composite structure including the step of introducing a fire resisting agent to the barrier *after* formation of the barrier layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. The Specification describes a process, wherein the fire-resisting agent is introduced during the formation of the barrier (page 3, lines 19-24; Figure 3); however, the Specification is silent regarding the introduction of the fire-resisting agent *after* formation of the barrier.

7. Claims 2 and 16 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Claims 2 and 16 contain a limitation, wherein the fire-resisting agent is introduced by "in-situ infusion". The meaning of this term is not clear, and the Specification fails to clearly define this concept. Infusion is defined in the Merriam Webster's Collegiate Dictionary (10th edition) as:

The act or process of 1a: to cause to be permeated with something that alters usually for the better; 2b introduce, insinuate;

and in-situ is defined as:

in the natural or original position or place.

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These two terms in combination appear to be contrary concepts. "In-situ" implies a pre-existence, and "infusion" implies an introduction from an outside source. It is unclear how these two concepts can coexist in combination.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 2, 9, 12-14, and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

10. Claims 2, 9, and 12-14 recite the limitation "after formation of the barrier" in a process of forming a composite structure. There is insufficient antecedent basis for this limitation in the claim. In claims 2, 9, and 12-14, there is no mention of a "formation of the barrier" prior to this limitation.

11. Claims 13 and 14 recite the limitation "during formation of the substrate" in a process of forming a composite structure. There is insufficient antecedent basis for this limitation in the claim. In claims 13 and 14, there is no mention of a "formation of the substrate" prior to this limitation.

12. Claim 16 recites the limitation "after said formation of the barrier" in a process for protective fabrication of a composite structure. There is insufficient antecedent basis for this limitation in the claim. There is no mention of a "formation of the barrier" prior to this limitation.

The following are suggested changes for claims 2, 9, 12-13, and 16:

2. A process of forming a composite structure by applying a barrier to an underlying substrate during fabrication of the composite structure, including the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier *during* formation of the barrier; b) forming a substrate; and c) attaching the barrier to the substrate before completing fabrication of the composite structure; wherein said introduction of the fire resisting agent comprises infusion of the fire resisting agent into the barrier.

9. A process of forming a composite structure by applying a barrier to an underlying substrate during fabrication of the composite structure, including the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier *during* formation of the barrier; b) forming a substrate; and c) attaching the barrier to the substrate before completing fabrication of the composite structure; wherein the barrier is an intumescent mat, and the fire resisting agent is a phenolic resin.

12. A process of forming a composite structure by applying a barrier to an underlying substrate during fabrication of the composite structure, including the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier *during* formation of the barrier; b) forming a substrate; and c) attaching the barrier to the substrate before completing fabrication of the composite structure; wherein said attaching of the barrier to the substrate is performed by providing an adhesive between the barrier and the substrate.

13. A process of forming a composite structure by applying a barrier to an underlying substrate during fabrication of the composite structure, including the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier *during* formation of the barrier; b) forming a substrate; and c) attaching the barrier to the substrate before completing fabrication

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of the composite structure; wherein said fire-resisting agent is introduced by infusion into the barrier during formation of the substrate to effect the attachment of the barrier to the substrate without using an adhesive.

16. A process for protective fabrication of a composite structure by applying a barrier to an underlying substrate during fabrication of the composite structure, the improvement residing in the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier by infusion *during* formation of the barrier; b) forming a substrate; and c) attaching the barrier to the substrate before completing fabrication of the composite structure; wherein said fire-resisting agent is introduced to the barrier during formation of the substrate to effect the attachment of the barrier to the substrate without using an adhesive.

Specification

13. The following is a quotation of the first paragraph of 35 USC §112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of 37 CFR §1.71(a):

(a) The specification must include a written description of the invention or discovery and of the manner and process of making and using the same, and is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains, or with which it is most nearly connected, to make and use the same.

The specification is objected to under 37 CFR §1.71 because: the meaning of “in-situ infusion” is not clear, and the Specification fails to clearly define this concept.

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 2, 9, 12-14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Licht (US Pat. No. 4,467,577).

Regarding claims 2, 9, and 12-14, Licht discloses (*claims 2, 9, and 12-14*) a process of forming a composite structure (Abstract) by applying a barrier to an underlying substrate (column 2, lines 63-67; column 4, lines 12-19) during fabrication of the composite structure, including the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier (column 2, lines 24-29); b) forming a substrate (column 2, lines 63-67; column 4, lines 12-19); and c) attaching the barrier to the substrate before completing fabrication of the composite structure (column 2, line 63 through column 3, line 6; column 4, lines 12-19); wherein (*claim 9*) the barrier is an intumescent mat (column 2, lines 24-29), and the fire resisting agent is a phenolic resin (column 2, lines 24-29); and wherein (*claim 12*) said attaching of the barrier to the substrate is performed by providing an adhesive between the barrier and the substrate (column 3, lines 2-6).

Claims 2, 9, and 12-14 include the limitation that the fire-resisting agent is introduced to the barrier *after* formation of the barrier. Licht does not teach this limitation; however, this limitation represents a change in sequence or a reversal of process steps. It has been found that a process of making a laminated sheet (composite structure) by reversing the order of process steps found in the prior art is an obvious variation of the prior art process – *Ex Parte Rubin*, 128 USPQ 440 (Bd. App. 1959). In *Ex Parte Rubin*, a prior art reference disclosing the process of making a laminated sheet wherein the base sheet is first coated with a metallic film and thereafter

impregnated with a thermosetting material, was held to render *prima facie* obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.

Therefore, if not explicitly taught in the reference, then the teachings of claims 9 and 12 would have been obvious to one of ordinary skill in the art at the time of the invention.

Claim 2 also includes the limitation that the fire-resisting agent is introduced by "infusion" into the barrier layer during fabrication of the composite structure. Infusion is defined in the Merriam Webster's Collegiate Dictionary (10th edition) as:

The act or process of 1a: to cause to be permeated with something that alters usually for the better; 2b introduce, insinuate.

Licht teaches an intumescent barrier comprising a flexible rubbery material "filled" with a char-forming component, such as phenolic resin, to provide flame retardency, wherein the intumescent barrier is capable of expanding up to 10 times its original volume and becomes a rigid char when exposed to temperatures on the order of 110°C or higher (column 2, lines 24-37). One within the skill of the art would recognize that the term "filled" is often equivalent to the term "dispersed" to describe a system wherein a solid filler is uniformly blended into a binder material. The char-forming filler in Licht is filled/dispersed into the composition to provide a barrier with intumescent properties. One skilled in the art would recognize that a "filled" or "dispersed" filler of Licht would have been equivalent to an "infused" filler because the filler is introduced to and permeated into the flexible rubbery material.

Therefore, if not explicitly taught in the reference, then the teachings of claim 2 would have been obvious to one of ordinary skill in the art at the time of the invention.

Claims 13 and 14 include the limitations that the fire-resisting agent is introduced by infusion into the barrier during formation of the substrate to effect the attachment of the barrier to the substrate without using an adhesive and that the substrate is formed as a solid layer underlying the barrier attached thereto. The step of introducing the fire-resisting agent by infusion would have been obvious for the reasons set forth above in claim 2. Regarding the attachment step, this limitation is drawn to the bonding of the barrier layer to the substrate without the assistance of an adhesive. Licht discloses this type of bonding (column 2, line 63 through column 3, line 1), wherein said substrate is formed as a solid layer underlying the barrier attached thereto (column 2, line 55 through column 3, line 1).

Therefore, if not explicitly taught in the reference, then the teachings of claims 13 and 14 would have been obvious to one of ordinary skill in the art at the time of the invention.

Regarding claim 16, Licht discloses a process for protective fabrication of a composite structure (Abstract) by applying a barrier (column 2, lines 24-29) to an underlying substrate during fabrication of the composite structure (column 2, lines 63-67; column 4, lines 12-19), the improvement residing in the steps of: a) forming a barrier, wherein a fire resisting agent is introduced to the barrier (column 2, lines 24-29); b) forming a substrate (column 2, lines 63-67; column 4, lines 12-19); and c) attaching the barrier to the substrate before completing fabrication of the composite structure (column 2, line 63 through column 3, line 6; column 4, lines 12-19); wherein said fire-resisting agent is introduced to the barrier during formation of the substrate to effect the attachment of the barrier to the substrate without using an adhesive (column 2, line 63 through column 3, line 1).

Claim 16 includes the limitation that the fire-resisting agent is introduced to the barrier *after* formation of the barrier. Licht does not teach this limitation; however, this limitation represents a change in sequence or a reversal of process steps. It has been found that a process of making a laminated sheet (composite structure) by reversing the order of process steps found in the prior art is an obvious variation of the prior art process – *Ex Parte Rubin*, 128 USPQ 440 (Bd. App. 1959). In *Ex Parte Rubin*, a prior art reference disclosing the process of making a laminated sheet wherein the base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material, was held to render *prima facie* obvious claims directed to a process of making a laminated sheet by reversing the order of the prior art process steps.

Licht also does not explicitly disclose the limitation that the fire resisting agent is introduced by “infusion” into the barrier layer during fabrication of the composite structure; however, this limitation would have been obvious for the reasons set forth above in claim 2.

Therefore, if not explicitly taught in the reference, then the teachings of claim 16 would have been obvious to one of ordinary skill in the art at the time of the invention.

Comments

16. In a previous response, Applicant argued that *Ex parte Rubin* relates only to double patenting rejections. MPEP § 2144.04 discloses:

As discussed in MPEP § 2144, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.

; and MPEP § 2144.04 (IV-C), recites:

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C. Changes in Sequence of Adding Ingredients

Ex parte Rubin, 128 USPQ 440 (Bd. App. 1959) (Prior art reference disclose a process of making a laminated sheet wherein a base sheet is first coated with a metallic film and thereafter impregnated with a thermosetting material was held to render *prima facie* obvious claims directed to a process for making a laminated sheet by reversing the order of the prior art process steps.).

Furthermore, MPEP § 804 (II-B-1), reads:

A double patenting rejection of the obvious-type is "analogous to [a failure to meet] the nonobviousness requirement of 35 U.S.C. 103" except that the patent principally underlying the double patenting rejection is not considered prior art. *In re Braithwaite*, 379 F.2d 594, 154 USPQ 29 (CCPA 1967). **Therefore, any analysis employed in an obvious-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination.** *In re Braat*, 937 F.2d 589, 19 USPQ3d 1289 (Fed. Cir. 1991); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985).

Because the analysis employed in an obvious-type double patenting rejection parallels the guidelines for analysis of a 35 U.S.C. 103 obviousness determination, the decision set forth in *Ex parte Rubin*, 128 USPQ 440, would also apply to analysis of a 35 U.S.C 103 obviousness determination in the instant application.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

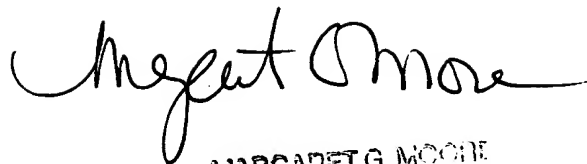
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

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Michael J. Feely
December 4, 2002

A handwritten signature in cursive script, reading "Margaret Moore".

MARGARET G. MOORE
PRIMARY EXAMINER